



**ENGINEERS INDIA RESEARCH INSTITUTE**  
*We Create Industrialists*

**DETAILED FEASIBILITY REPORT**

**(PROJECT FEASIBILITY REPORT)**

**O N**

**YEAST DRY POWDER FROM MAIZE**



**IDENTIFICATION & EVALUATION DIVISION FOR HI-TECH PROJECTS**

**ENGINEERS INDIA RESEARCH INSTITUTE**

**EIRI CONSULTANTS & ENGINEERS**

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**Web: www.eiriindia.org, www.eiribooksandprojectreports.com**

**CODE : EIRI/DFR/8476**  
**J.C. : 6638**



**C A U T I O N**

This project report has been prepared on the basis of information available with **M/S. ENGINEERS INDIA RESEARCH INSTITUTE**. The intention here is to provide preliminary information to the prospective entrepreneur. Prior to making a firm decision for investment in the project the entrepreneur must verify the various feasibility aspects together along with the addresses for the procurement of plant & machinery and raw materials independently. The information supplied in this report is obtained from the reliable sources but it is not guaranteed and the money once paid will not be refunded back in any case. Claims for incomprehensiveness of the project report will not be entertained and no legal action in this regard would be entertained in any case (Subject to Delhi Jurisdiction only). Any matter relating to our standard points covered in the report may be modified with in 5 days time only from the date of purchase.

**ENGINEERS INDIA RESEARCH INSTITUTE, 4449 NAI SARA, DELHI-110006.**



**YEAST DRY POWDER FROM MAIZE**  
**[EIRI/DFR/8476] J.C. 6638**

**C O T E N T S**

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## **YEAST DRY POWDER FROM MAIZE [EIRI/DFR/8476] J.C. 6638**

### **INTRODUCTION**

#### **PRODUCTION DESCRIPTION:-**

There are two types of yeast as compressed yeast. It is convenient to use dry yeast powder for bakeries because its handling is simple and its preservation easy. Dry yeast which can be contained in the form of pillets or flakes in packets or tins. Can be kept for some time in cool, dry conditions.

It is important to remember that :

- a. Approximately half as much dried yeast as fresh is required in any recipe.
- b. Reconstitution is necessary before using dried yeast.

This is done by soaking the yeast in luke warm water at 85°F containing 2 oz, sugar to 2 pint water, the water and sugar used for reconstitution should be subtracted from the quantities given in the receipt. Sugar can be omitted, but the proving is necessary with fresh yeast.

Yeast is a living organism which requires warmth (80-85°F) food and liquid so that it can live and reproduce. The ingredient and utensils used in bread making and the atmosphere in which the bread is proved must, therefore, be lukewarm; sudden cooling hinders growth and anything hot will yeast before it has had time to multiply.

Yeast powder is very important ingredient in bread making and if it is not added, the bakery breads will be produced like homely breads.



It appears that during world war II about 9000 tons of food yeast were produced. Name of these processes employed for this production could be continued after the war mainly because the molasses used could not compete economically with cane or beet molasses.

Some new developments for manufacture of yeasts from cellulosic wastes have been made. For this purpose sugarcane molasses is the main raw material. Glucose obtained after hydrolysis of molasses has been found to be suitable for growth of yeasts. The process as developed in the laboratory is ready for scale up to pilot plant level. The details of manufacturing yeast powder by this process is given under the heading manufacturing details.

Yeast dry powder is readily available in the market at the competitive price but since the production starts using waste sugarcane molasses, the production cost will come to the lower giving high yield of profit.

## **USES & SCOPE**

World wide production of yeast is estimated to be around 100 million tons per year. India's production is estimated to be in order of 12,000 tons per year while the consumption to is estimated to be about 15,000 to 17,000 tons per annum thus a gap between leaving production and consumption ranging from 3,000 to 5,000 tons per year. It appears from this data that there is good scope for further expansion or for setting up new projects to start manufacturing food yeast in dry form.

The utilization of food yeast is for food, agriculture and industrial purposes, but dry powder yeast finds its extensive use in making breads. By using yeast which feed on the sugar mixtures produces carbon dioxide in cookery for swelling of the breads.



## **PROPERTIES OF YEAST**

Yeast has such chemical properties that it swells the flour and thus the bakery bread is swelled. Of course yeast is a small germ like bacteria which are not visible but these germs are most useful for health instead of giving any harm. Wheat flour contains about 12% protein and the proteins are produced from a material known as Gluten and this gluten digests very hardly. In fact yeast coagulate the gluten due to which bakery bread becomes more digestible in comparison to homely breads.

Yeast is the most suitable fermenting agent, The yeast zymase develops fermentation in the dough, producing carbon dioxide and alcohol. The former causes the dough to rise and the latter is expelled during baking. Modern factories use compressed or active yeast. Most commonly 1 lb., of yeast is needed for treating 100 lbs. of flour. Compressed yeast is dissolved in water at a temperature of 80-85°C and kept for an hour before use, with active dry yeast, the ferment is prepared by mixing 1 lb. of yeast. Certain type of dry yeast are brought to an active condition by mixing 1.5 lb. of sugar.

Yeast grows and takes its while adding to wheat flour and within couple of hours the quantity of these germs increase and become in crores. The germs leave carbonic acid gas from their body like human due to which the flour shells. When this flour is baked in the oven the rough moulds, this gas starts coming out of the flour and creates numberless holes in the bread and the bread becomes like sponge.



### **B.I.S. SPECIFICATION**

1. IS : 1320 - Bakers Yeast.
2. IS : 3839 - Food Yeast.
3. IS : 3198 - Fooder Yeast.
4. IS : 7004 - Yeast extract.

**For more Information contact at:**

**Headquarters:**

Manak Bhavan, 9 Bahadur Shah Zafar Marg,  
New Delhi-110 002  
91 11 23238821,23233375,23239402  
91 23238821, 23239399 (Fax)  
[sales@bis.org.intandards](mailto:sales@bis.org.intandards) Institution.





<b>Sr.No.</b>	<b>Sales Outlets Address</b>	<b>Telephone No/Fax/e-mail</b>
01.	<b>Director (Sales)</b> Manak Bhawan, 9, Bahadur Shah Zafar Marg New Delhi-110 002	91-11- 23238821,23233375,23239402 91-23238821, 23239399(Fax)
02.	<b>Western Regional Office</b> Manakalaya, Plot No. E-9, MIDC, Road No. 8, Behind Telephone Exchange, Andheri (East), Mumbai-400 093	Phone 022-28329295 Fax 28374231 Email: saleswro@bis.org.in
03.	<b>Eastern Regional Office</b> 5, Chowringhee Approach P.O. Princep Street, Kolkata-700 012	033-232053243 91-33-23377459(Fax) <a href="mailto:ero@bis.org.in">ero@bis.org.in</a>
04.	<b>Northern Regional Office</b> SCO 335-336, Sector 34-A Chandigarh-160 022	91-0172 2665512 91-0172 2602025 (Fax) 910172-2609285, 2664750,2624136(PBX) <a href="mailto:nro@bis.org.in">nro@bis.org.in</a>
05.	<b>Southern Regional Office</b> C.I.T. Campus, IV Cross Road Chennai-600 013	91-044-22542315, 22541584,22541470 91-044-22541087 (Fax) <a href="mailto:sro@bis.org.in">sro@bis.org.in</a>

*NOTE :- The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.*



## **MARKET POSITION & SCOPE**

Yeast is available in the market in two forms as compressed yeast and dry yeast. The activity of compressed yeast is high but it cannot stand for long-time. The dry yeast having low activity & can be stored for more time.

Dry yeast is available in form of pellets or flakes in packets or tins. The total estimated production in India is about 15000 tons per year. While the consumption is about 17000 to 20000 tons in year. To fill the demand gap of 2000 to 5000 tons between production & consumption so few more industries are required.

The utilization of yeast is for food, agriculture & industrial purpose. Dry yeast powder finds its extensive use in making foods. By using yeast which feeds on the sugar produces carbon dioxide in cookery for swelling of the breads. The economical capacity to manufacture yeast on small scale is 1 ton per day.



## **PRESENT MANUFACTURES OF YEAST**

### Ritu Enterprises

Gala No. 11, Sainath Society No. 2,  
Dagah Cross Road, Tilak Nagar, Sonapur, Bhandup  
Mumbai - 400078, Maharashtra, India  
Mobile: +(91)-9320066510, +(91)-9820066510  
Telephone: +(91)-(22)-25963785, +(91)-(22)-25943787  
Email: rituenterprises42@gmail.com, sushilcrown66@gmail.com  
info@rituenterprises.com

### Chemic World Pvt. Ltd.

Dynasty Business Park, A- Wing, Level-4,  
Andheri- Kurla Road, Andheri-East  
Mumbai - 400059, Maharashtra, India  
Mobile: +(91)-9004329919  
Email: chemicworldpvtltd@gmail.com

### Malik Agencies

Neechi Mangali, Adjoining Lane,  
Near Old Octroi Post, Chandigarh Road  
Ludhiana - 141001, Punjab, India  
Mobile: +(91)-8872175700, +(91)-8872218882  
Telephone: +(91)-(161)-2670674  
Fax: +(91)-(161)-2670674

### Mitushi Pharma

C-203, Supath-II, Beside St. Larn Hotel,  
Ashram Road, Usmanpura  
Ahmedabad - 380013, Gujarat, India  
Mobile: +(91)-9662511692, +(91)-9662511693  
+(91)-9924101692  
Telephone: +(91)-(79)-27550490  
1. M/s. Glaxo Laboratories India Ltd.,



## **PROCESS OF MANUFACTURE FOR YEAST FROM MAIZE**

For the manufacture of yeast from maize first starch can be formed by wet milling process the starch so obtained can be converted into yeast by fermentation process and after fermentation the product is filter and centrifuge the clarified liquid is sent to a storage tank where other ingredients viz sodium phosphate and magnesium phosphate is added finally the product is dried in a tray dries, tested for quality and despatch for marketing.

### **(a). CONVERSION OF MAIZE INTO STARCH**

Starch from maize is obtained by the wet milling process. The process involves cleaning of grains, steeping, milling, separation of husk, germ and gluten, and drying the product. The grains received at the mills and magnetic separators to completely eliminate the extraneous matter present. The cleaned grain is stored in concrete silos.

The grain is transported to steeping vat by elevators and conveyors through a weighing machine. Warm water containing a small amount of sulphur dioxide is circulated through the vats to loosen the husk and soften the gluten. During the steeping, a part of the soluble salts and proteins get dissolved and when the solid matter content of the water reaches 6-10 % it is replaced by fresh steep water.

After steeping the softened grain are passed over vibrating screens to remove any adhering foreign matter and then ground in attrition mills consisting of two plates with protruding teeth. The ground mass is passed in to wooden, V shaped, germs form the rest of the mass. The floating terms are skimmed over by sweep paddles, and washed. The mixture of starch gluten, husks and fibre recovered at the bottom and sent to vibrating screens to eliminate excess water and soluble substances. It is then thoroughly milled in fine grinders to fine slurry known as starch milk. The grinders may be either Buhr stone mills or preferably vertical mill made of stainless steel. The starch milk is processed in centrifuges to remove husk and fibre which are washed free of adhering starch in the counter current system and washing fed back to the main starch stream.



The resulting slurry is passed through high speed continuous centrifuges where the lighter gluten is separated from the heavier starch. In the first stage, the heavy starch layer is taped in such a way that least possible amount of starch goes in which the overflow of gluten, thus maintaining gluten purity. In the latter stages the process is reversed to ensure the purity of the starch. The gluten from the first stage is concentrated and pressed into cake. The glutenous starch from the latter stages is fed back to the main stream at the husk separation stage. The deglutenized starch milk is dewatered in a perforated bucket centrifugal machine to a moisture content of about 30-36 percent.

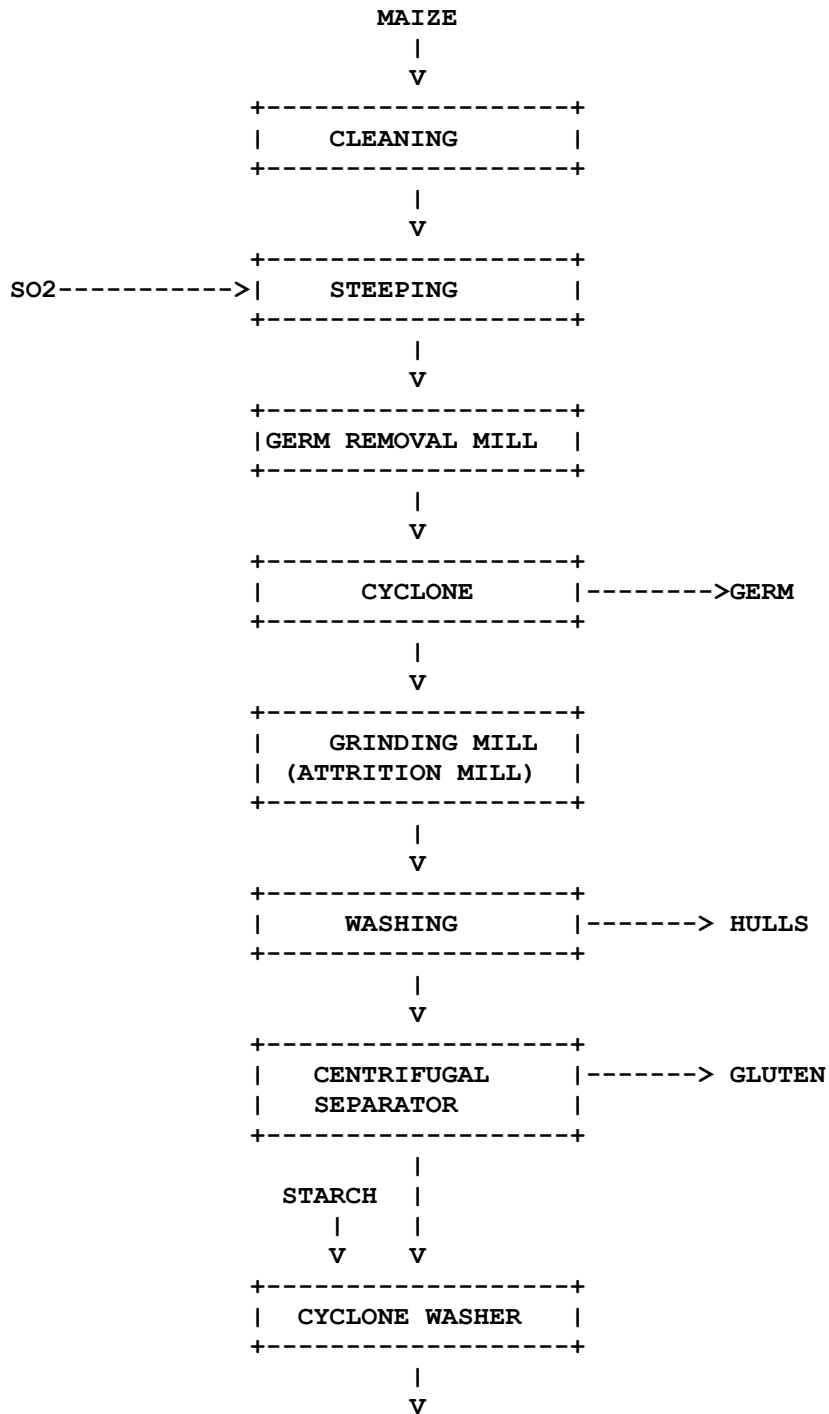
#### **(b). CONVERSION OF STARCH INTO YEAST**

Yeast is marketed with 7.5% moisture content in dry supper power form. For the manufacture of active dried yeast for baking purposes, The starch is treated in the fermentors in such a way that its reserve carbohydrate content, in the form of trehalose and glycogen. The compressed yeast is usually extracted from a machine into thin strands which are dried on trays in an airflow of carefully controlled temperature and humidity. When dried to about 7.15% moisture content, the yeast is packed in moisture proof containers. Usually in the absence of oxygen and refrigerated. Some plants use rotary driers which produce smooth round pellets, rather than sheet spaghetti like pieces of porous appearance. Dried yeast is stable for many months under nitrogen. Rehydration of dried yeast must be done in water at about 43°C.

Nitrogen is supplied in the form of Ammonium Sulphate and Ammonium Hydroxide, Phosphate dibasic Sodium Phosphate  $\text{Na}_2\text{HPO}_4$  and Magnesium Sulphate.



## PROCESS FLOW SHEET







## **DESCRIPTION OF WET MILLING PROCESS**

The wet milling process can be divided into following steps:-

- 1) Cleaning and Soaking (steeping) of maize
- 2) Steep liquor concentration
- 3) Crude germ oil recovery
- 4) Fibre separation
- 5) Gluten (protein portion) separation and concentration
- 6) Starch washing, dewatering and drying

### **CLEANING AND SOAKING**

The maize received at site is weighed, cleaned by grain cleaners and stored in silos. When required, it is again cleaned. This operation is known as dry cleaning of maize, which removes dust, broken grain and foreign matters. This reject from the grain is mixed with cattle feed. After cleaning, the grains is once again weighed before steeping.

Sulphur is burnt separately in a rotary burner. Generated sulphur dioxide is cooled and absorbed in an absorption tower. The sulphurous acid formed is known as steep acid. It is pumped to steep acid tank where weighed again as already been added. The grain is soaked for 48 hour in warm steep acid, the temperature being maintained at 50-55~C. The steep inhibits fermentation and softens the kernel.





## **STEEP LIQUOR CONCENTRATION**

During the steeping period, solubles are leached out of the maize grain, including those from the germ fraction. The steep liquor is drawn off from the steeping tanks. It is concentrated to about 50% solids in three stages. Vapours coming out of evaporators are condensed and the hot water from condenser is used for making steep acid again.

## **CRUDE GEM OIL RECOVERY**

The grain, after steeping is dewatered in a DSM dewatering screen. The softened corn kernels are degerminated between two studded steelplates, one rotating and one stationary, which tear the kernels apart and extricate the corn germs without crusing them. The germs are made into a slurry and are floated away from the rest of the kernel, because of their high oil content. They are then dewatered by DSM dewatering screen and go for expelling and oil recovery.

Primary grinding or determination is a difficult separation since maize has to be partially macerated to remove the pericarp (outer fibrous layers), free the germ from endosperm by breaking up the endosperm partially and at the same time not damage the germs.

## **FIBRE SEPARATION**

Grain slurry is again dewatered in a DSM dewatering screen. The degerminated maize at this stage contains fibre, starch and protein. Fine grinding is done in a secondary grinding mill. The starch and gluten (protein) are reduced to a fine particle size while fibres is not reduced to the same degree and hence can be separated.



## **GLUTEN SEPARATION AND CONCENTRATION**

Gluten is separated from starch particles by hydrocyclones, where the heavier starch granules settle out at the bottom while the lighter gluten particles are carried off in the overflow.

## **STARCH WASHING DEWATERING**

Starch slurry free of gluten is washed with fresh water in a series of hydrochloners.

It is then pumped to a dewatering centrifuge where water is removed and recycled to prime starch tank.



## **SUPPLIERS OF RAW MATERIALS**

Maize can be procure from the local market.

### **MAGNESIUM SULPHATE**

Ashutosh Chemicals  
1033/1, Tilak Bazar Chowk  
Delhi - 110006, India  
Mobile: +(91)-9811648068  
+(91)-9999005405  
Telephone: +(91)-(11)-23928588, (91)-(11)-23991251

Alliance Global  
No. 2187/1, 1st Floor, Gali Hinga Beg,  
Tilak Bazar, Delhi - 110006, India  
Mobile: +(91)-9810005783, +(91)-9873366520, +(91)-9910375733  
Telephone: +(91)-(11)-23930210, +(91)-(11)-23930211

Advance Inorganics  
No. 2346, Tilak Bazar  
Delhi - 110006, India  
Mobile: +(91)-9899799723, +(91)-9711461412  
+(91)-9811026303, +(91)-9971025215  
Telephone: +(91)-(11)-23935333, +(91)-(11)-23968750  
Fax: +(91)-(120)-4277709  
Email: [advanceinorganics@gmail.com](mailto:advanceinorganics@gmail.com)

Shri Krishna Enterprises  
B 402, Rishabh Tower,  
Karkardooma Community Center,  
Opposite Karkardooma Metro Station  
Delhi - 110092, India  
Mobile: +(91)-9818416662, +(91)-9818416762  
Telephone: +(91)-(11)-43003928  
Email: [india.ske1@gmail.com](mailto:india.ske1@gmail.com), [india.ske@gmail.com](mailto:india.ske@gmail.com)



## **SODIUM PHOSPHATE**

Satyam Chemical Industries  
60, Vrundavan Bunglows-1,  
Near Medilink Hospital,  
132 Feet Ring Road, Satellite  
Ahmedabad - 380015, Gujarat, India  
Mobile: +(91)-9824286453, +(91)-9824086311

Global Medicines Limited  
N. H. - 8, Uttarsanda Gutal Road,  
Near Sadansha Pir, Uttarsanda  
Nadiad - 387370, Gujarat, India  
Mobile: +(91)-9429031344, +(91)-9824041895  
Telephone: +(91)-(268)-2588066  
Fax: +(91)-(268)-2588606  
Email: [globalmedici@satyam.net.in](mailto:globalmedici@satyam.net.in)

Akash Purochem Private Limited  
No. 1/3, Kandhari Colony, 2nd Road,  
Chembur East, Mumbai - 400071,  
Maharashtra, India  
Mobile: +(91)-9320231817, +(91)-9322231817  
+(91)-9320331817, +(91)-9867252610  
Telephone: +(91)-(22)-25215048, +(91)-(22)-64564860  
+(91)-(22)-64564852  
Fax: +(91)-(22)-25210934

Mahavir Chemical Industries  
16/3, W. E. A., Abdul Aziz Road,  
Karol Bagh, Delhi - 110005, India  
Mobile: +(91)-9717884444



**SUPPLIERS OF PLANT & MACHINERY**

**TANK**

D.M. Engg. Co  
Unit No. 4, Building No. 5 - A,  
Rajprabha Mohan Industrial Estate,  
Off W. E. Highway, Naikpada, Vasai,  
Maharashtra - 410 208, India  
Phone: +(91)-(250)-3217484  
Fax: +(91)-(250)-2456877 / 28803259  
Mobile: +(91)-9867341077 / 9892946832  
Website: [www.frpaquatech.com/chemical-process-equipment.html](http://www.frpaquatech.com/chemical-process-equipment.html)

M/S. Nu-Plast Pipes & Profiles  
Plot No. 19, Wazirpur Road, Across Kheri Bridge,  
Old Faridabad, Faridabad, Haryana - 121 002, India  
Phone: +(91)-(129)-2438446  
Fax: +(91)-(129)-6546217  
Mobile: +(91)-9873002192  
Website: [www.nuplast.com/acid-storage-tank.html](http://www.nuplast.com/acid-storage-tank.html)



## **CENTRIFUGE**

Excel Plants & Equipment Pvt Ltd  
Gate No. 611, Mouje Kuruli, Chakan M. I. D. C.  
Tal- Khed, Pune - 410 501, Maharashtra, India  
Mobile No : +(91)-9145524545 / 9145524901  
Telephone : +(91)-(2135)-679703 / 679707 / 679701  
Fax : +(91)-(2135)-679706

Standard Steel  
No. 530, Ram Bagh Road  
Ambala - 133001, Haryana, India  
Mobile: +(91)-9466463642, +(91)-9896356669  
+(91)-8950584100  
Telephone: +(91)-(171)-4002259  
Fax: +(91)-(171)-4002259  
Email: standardsteel@hotmail.co.in  
standardsteel@yahoo.com, standardsteel@live.com

Air Creations India. (Aci )  
207, 2nd Floor, Usha Kiran Building, Azadpur  
Commercial Complex, New Delhi- 11 00 33  
Phone : + 91 - 11 - 6473 1224  
Mobile: + 91 - 98716 72548  
Email: Info@Aircreationsindia.Com  
Website: Www.Aircreationsindia.Com

Nes India Engineers  
Sector No. 10, Plot No. 106, P. C. N. T. D. A.,  
MIDC, Bhosari, Near Times Of India Press  
Pune - 411026, Maharashtra, India  
Mobile: +(91)-9850128027, +(91)-9860753071  
Telephone: +(91)-(20)-65100608



## **FILTER PRESS**

Goyum Screw Press  
Plot No. 324/2, Industrial Area- A.  
Ludhiana - 141003, Punjab, India  
Phone: +(91)-(161)-5084180  
Web: [www.oilmillmachinery.com](http://www.oilmillmachinery.com)

Vihar Engineering  
9, Kembros Industrial Estate, Sonapur Lane,  
Behind Asian Paints, Bhandup (West)  
Mumbai - 400078, Maharashtra, India  
Mobile No :+(91)-9820778915 / 9819582526  
Tel. No. :+(91)-(22)-25660821 / 25663821  
Fax :+(91)-(22)-25663821  
E-mail : [rabinder\\_chhabra@yahoo.com](mailto:rabinder_chhabra@yahoo.com),  
[rabinderchhabra@hotmail.com](mailto:rabinderchhabra@hotmail.com),  
[sales@viharengineering.com](mailto:sales@viharengineering.com)

Ace Industries  
Plot No. 8, Gala No. 2, Shilay Industries,  
Goregaon West, Mumbai - 400104,  
Maharashtra, India  
Phone: +(91)-(22)-28781285  
Fax: +(91)-(22)-28781174  
Web: [www.aceindus.com](http://www.aceindus.com)

The Adarsh Engineering Works  
Ghat Road, Near Union Bank  
Nagpur - 440018, Maharashtra, India  
Mobile: +(91)-9370302490  
+(91)-9422102490  
Telephone: +(91)-(712)-2725150  
Fax: +(91)-(712)-2725150  
Email: [theadarshrasraj@yahoo.in](mailto:theadarshrasraj@yahoo.in)



## **MIXER**

S. N. Electrical Industries  
Lane No. 3, Plot No. 4,  
Shalimar Industrial Area,  
New Delhi, Delhi - 110 088, India  
Phone: +(91)-(11)-27494499 / 27494411  
Fax: +(91)-(11)-27494411  
Mobile: +(91)-9911091125  
Website: [www.snelectricals.com/mixer-grinder.html](http://www.snelectricals.com/mixer-grinder.html)

Shadows Ltronix System  
No. 257 & 258, 1st Floor, 2nd Main Road,  
Nehru Nagar, Kottivakkam, Old Mahabalipuram Road,  
Chennai, Tamil Nadu - 600 096, India  
Phone: +(91)-(44)-42914433  
Fax: +(91)-(44)-42914445  
Mobile: +(91)-9884490909 / 9176999944  
Website: [www.shadowsltronix.com/kitchen-appliances.html](http://www.shadowsltronix.com/kitchen-appliances.html)

Libra Appliances Private Limited  
No. 71, Canning Street, Bagree Market, 3rd Floor,  
Room No. A-305, Kolkata, West Bengal - 700 001, India  
Phone: +(91)-(33)-22159588 / 22353099  
Mobile: +(91)-9339861441  
Website: [www.librahomeappliances.com/mixer-grinder.html](http://www.librahomeappliances.com/mixer-grinder.html)

Shakti Global Services, Surat  
Address: No. 11, 2nd Floor, Akshar Shopping Center,  
Road No. 0, Near Railway Station, Udhana,  
Surat, Gujarat - 394 210, India  
Phone: +(91)-(261)-2758073  
Fax: +(91)-(261)-2758073  
Mobile: +(91)-8980028888  
Website: [www.shaktimanagers.com/wholesale.html](http://www.shaktimanagers.com/wholesale.html)





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PLANT ECONOMICS

Rated Plant capacity = 1.00 TON/day  
= 300.00 TON/annum  
YEAST DRY POWDER FROM MAIZE

Basis

No. of working days = 25 days/month  
= 300 days/annum  
No. of shifts = 3 per day  
One shift = 8 hours

Currency - Rs.



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LAND & BUILDING

1. Land 2000 Sq.Mts. Rs.2000/- per Sq.mt.	Rs.	40,00,000.00
2. Production Area 800 Sq.Mts. Rs. 7000/- per Sq.mt.	Rs.	56,00,000.00
3. Raw Material Storage 100 Sq.Mts. Rs. 7000/- per Sq.mt.	Rs.	7,00,000.00
4. Finished Product Storage 100Sq.Mts. Rs. 7000/- per Sq.Mt.	Rs.	7,00,000.00
5. Laboratory 50 Sq.Mts. Rs. 8000/- per Sq.mt.	Rs.	4,00,000.00
6. Office Building 100Sq.Mts. Rs. 8000/- per Sq.Mt.	Rs.	8,00,000.00
7. Boundary Wall, gate and other miscellaneous Construction	Rs.	6,00,000.00
		-----
TOTAL	Rs.	1,28,00,000.00
		-----



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## PLANT & MACHINERY

1. Washer with accessories Cap: 500 kg /Hr.	1 No.	Rs.	80,000.00
2. Steeping Tank (M.S) Cap: 2 MT. @ Rs.40,000/-	2 No.	Rs.	80,000.00
3. Germ Removal mill Cap: 500 kg./hr. @ Rs.3,00,000/-	1 No.	Rs.	3,00,000.00
4. Grinding mill (Attrition Mill) Cap: 500 kg/hr.	1 No.	Rs.	1,00,000.00
5. Cyclone	1 No.	Rs.	1,00,000.00
6. Washing Tank (M.S) Cap: 2 MT @ Rs.45,000/-	2 No.	Rs.	90,000.00
7. Centrifuge @ Rs.1,00,000/-	2 No.	Rs.	2,00,000.00
8. Cyclone Washer	1 No.	Rs.	1,00,000.00
9. Fermenter (MS) Cap: 2 MT.	1 No.	Rs.	5,00,000.00
10. Flate & Frame Filter press Cap.: 500 kgs/hr.	1 No.	Rs.	80,000.00
11. Mixer (MS) fitted with agitator Cap:2 MT.	1 No.	Rs.	80,000.00
12. Tray Drier Cap:2 MT	1 No.	Rs.	60,000.00
13. Packing M/c. (Semi-Automatic)	1 No.	Rs.	1,50,000.00
14. Lab Tray Equipment		Rs.	1,00,000.00
15. Miscellaneous viz pipe fitting, valves, Motor, etc.		Rs.	2,00,000.00
	<b>TOTAL</b>	Rs.	<b>22,20,000.00</b>



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OTHER FIXED ASSETS

1. Office equipment, furniture plus other equipment & accessories	Rs.	1,50,000.00
2. Installation costs for water, electricity, fuel etc.	Rs.	2,00,000.00
3. Pre-operative & preliminary expenses	Rs.	30,000.00
4. Technical Know-how	Rs.	20,000.00
5. Miscellaneous expenses	Rs.	10,000.00
		-----
	TOTAL	Rs. 4,10,000.00
		-----



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**FIXED CAPITAL**

1. LAND & BUILDING	Rs.	1,28,00,000.00
2. PLANT & MACHINERY	Rs.	22,20,000.00
3. OTHER FIXED ASSETS	Rs.	4,10,000.00
		-----
	<b>TOTAL</b>	<b>Rs. 1,54,30,000.00</b>
		-----



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WORKING CAPITAL REQUIREMENT/MONTH

RAW MATERIALS

1. Maize 31.25 MT. Rs.12000/- per MT.	Rs.	3,75,000.00
2. Sodium Phosphates, Magnesium Sulphate & other additives & Ferme- ntor Chemicals 1250 kgs, @ Rs.60/- kg (Average)	Rs.	75,000.00
3. Packing Material	Rs.	40,000.00
		-----
	<b>TOTAL</b>	<b>Rs. 4,90,000.00</b>
		-----



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SALARY & WAGES / MONTH

1. Manager	1 No.	Rs.	26,000.00
2. Production Supervisor	1 No.	Rs.	20,000.00
3. Chemists	1 No.	Rs.	22,000.00
4. Skilled Workers	8 No.	Rs.	96,000.00
5. Semiskilled Workers	10 No.	Rs.	80,000.00
6. Sales/Purchase Executive	1 No.	Rs.	15,000.00
7. Clerk/Typist	1 No.	Rs.	8,500.00
8. Accountant	1 No.	Rs.	10,000.00
9. Peon/Chokidar	2 No.	Rs.	13,400.00
			-----
	TOTAL	Rs.	2,90,900.00
			-----
Plus perks @ 33% p.a.		Rs.	95,997.00
			-----
	TOTAL	Rs.	3,86,897.00
			-----



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UTILITIES AND OVERHEADS

1. Power Consumption of 4000 Kwatt hrs @ Rs. 7.00 per Kwatt hr.	Rs.	28,000.00
2. Water Consumption of 200 KLs @ Rs. 4.00 per KL	Rs.	800.00
3. Conveyance & Transportation etc.	Rs.	25,000.00
4. Publicity & Sales Promotion	Rs.	75,000.00
5. Miscellaneous	Rs.	40,000.00
6. Administrative Expenses	Rs.	5,000.00
		-----
	<b>TOTAL</b>	<b>Rs. 1,73,800.00</b>
		-----

Total load is 7 Kwatts





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**TOTAL WORKING CAPITAL/MONTH**

1. RAW MATERIAL	Rs.	4,90,000.00
2. SALARY & WAGES	Rs.	3,86,897.00
3. UTILITIES & OVERHEADS	Rs.	1,73,800.00
		-----
	<b>TOTAL</b>	<b>Rs. 10,50,697.00</b>
		-----

1. WORKING CAPITAL FOR 2 MONTHS	Rs.	21,01,394.00
2. MARGIN MONEY FOR W/C LOAN	Rs.	5,25,348.51

**COST OF PROJECT**

TOTAL FIXED CAPITAL	Rs.	1,54,30,000.00
MARGIN MONEY	Rs.	5,25,348.51
		-----
	<b>TOTAL</b>	<b>Rs. 1,59,55,348.51</b>
		-----



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**TOTAL CAPITAL INVESTMENT**

TOTAL FIXED CAPITAL Rs. 1,54,30,000.00

TOTAL WORKING CAPITAL FOR 2 MONTHS  
Rs. 21,01,394.00

TOTAL -----  
Rs. 1,75,31,394.00  
-----



YEAST DRY POWDER FROM MAIZE [EIRI/DFR/8476] J.C:6638  
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COST OF PRODUCTION/ANNUM

1. Working Capital for 1 year	Rs. 1,26,08,364.12
2. Interest @ 13.50% on T.C.I	Rs. 23,66,738.19
3. Depreciation @ 10.00% on buildings	Rs. 8,80,000.00
4. Depreciation @ 20.00% on Plant and Machinery	Rs. 4,44,000.00
5. Depreciation @ 20.00% on office equipment & furnitures	Rs. 30,000.00
<b>TOTAL</b>	<b>Rs. 1,63,29,102.31</b>



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TURN OVER/ANNUM

1. By Sale of 300 MT. of Dried Yeast  
Powder from Maize  
Rs. 65000/- per MT

Rs. 1,95,00,000.00

TOTAL Rs. 1,95,00,000.00

PROFIT = RECEIPTS - COST OF PRODUCTION

= 1,95,00,000.00 - 1,63,29,102.31

= 31,70,897.69

PROFIT SALES RATIO = Profit / Sales x 100

=  $\frac{31,70,897.69}{1,95,00,000.00} \times 100$

= 16.26 %

RATE OF RETURN = Operating profit / T.C.I x 100

=  $\frac{31,70,897.69}{1,75,31,394.00} \times 100$

= 18.09 %



BREAK EVEN POINT (B.E.P)

Fixed Costs of the plant are as under -

1. Interests	Rs.	23,66,738.19
2. Depreciation	Rs.	13,54,000.00
3. 40.00% of salaries	Rs.	18,57,105.60
4. 40.00% of overheads	Rs.	8,34,240.00
		-----
	TOTAL	Rs. 64,12,083.79
		-----

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{FIXED COSTS}}{\text{FIXED COSTS} + \text{PROFIT}} \times 100 \\ &= \frac{64,12,083.79}{64,12,083.79 + 31,70,897.69} \times 100 \\ &= 66.91 \% \end{aligned}$$

LAND MAN RATIO = Total land / Manpower

$$2000 : 26 :: 77 : 1$$



RESOURCES FOR FINANCE

1. Term loans from Financial institutions ( 65.00 % of fixed capital ) at @13.50% p.a rate of interest	Rs. 1,00,29,500.00
2. Bank loans for 3 months ( 65.00 % of working capital ) at @ 13.50% p.a rate of interest	Rs. 13,65,906.11
3. Self raised capital from even funds & loans from close ones to meet the margin money needs at a @ 13.50% p.a rate of interest	Rs. 61,35,987.91
<b>TOTAL</b>	Rs. 1,75,31,394.00



We hope **Detailed Feasibility Report** in your possession at the time, must have conveyed you the elementary idea on process data, market and economics. We feel you must have now taken a decision to finalize your project plan for ultimate implementation in a successful manner. Before you go ahead, we suggest you to take our **MARKET SURVEY CUM DETAILED TECHNO ECONOMIC FEASIBILITY REPORT**.

"EIRI" offer you **MARKET SURVEY CUM DETAILED TECHNO ECONOMIC FEASIBILITY REPORT** on this project.

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- Introduction
- Properties
- BIS (Bureau of Indian Standard) Specifications & Requirements
- Uses & Applications
- Present Indian Market Position
- Expected Future Demand
- Export & Import Statistics Data
- Names and Addresses of Existing Units (Present Manufactures)
- List of Plant & Machineries
- Miscellaneous Items and Accessories
- Instruments, Laboratory Equipments and Accessories
- Electrification, Electric Load and Water
- Maintenance, Suppliers/Manufacturers of Plant and Machineries
- Process of Manufacture with formulae if applicable
- Flow Sheet Diagram
- List of Raw Materials
- Availability of Raw Materials
- Requirement of Staff & Labour
- Personnel Management
- Skilled & Unskilled Labour
- Requirement of Land Area
- Built up Area
- Plant Layout.

**along with financial details as under:**

Summary of Capital Cost of Project  
Land & Side Development Exp.  
Buildings  
Plant & Machineries  
Misc. Fixed Assets  
Technical Know how Fees & Exp.  
Preliminary Expenses  
Pre-operative Expenses  
Provision for Contingencies

below mentioned financial statements (Annexure) will be for 5 to 10 Years

- Annexure :: Cost of Project and Means of Finance
- Annexure :: Output, Profitability and Cash Flow Chart
- Annexure :: Assessment of Working Capital requirements



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Annexure ::	Sources of Finance
Annexure ::	Balance Sheets
Annexure ::	Break-Even Analysis and profitability analysis.
Annexure ::	Quantitative Details-Output/Sales/Stocks
Annexure ::	Sales Realisation
Annexure ::	Raw Material Cost
Annexure ::	Other Raw Material Cost
Annexure ::	Packing Material Cost
Annexure ::	Consumables, Store etc.,
Annexure ::	Employees Expenses
Annexure ::	Fuel Expenses
Annexure ::	Power/Electricity Expenses
Annexure ::	Repairs & Maintenance Exp.
Annexure ::	Other Mfg. Expenses
Annexure ::	Administration Expenses
Annexure ::	Selling Expenses
Annexure ::	Depreciation Charges - Profitability
Annexure ::	Depreciation Charges
Annexure ::	Interest and Repayment - Term Loans
Annexure ::	Tax on Profit
Annexure ::	Assumptions for Profitability workings
Annexure ::	Assessment of Working Capital

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